

What is claimed is:

1. A composition suitable for treating a subject having a condition associated with expression or overexpression of an oncogene, comprising a pharmaceutically acceptable excipient and a transcription-inhibiting amount of at least one polyamide, said polyamide comprising:
 - at least four complementary pairs of aromatic carboxamide residues, the complementary pairs of aromatic carboxamide residues being selected to correspond to the nucleotide sequence of a dsDNA target;
 - 10 at least two aliphatic amino acid residues chosen from the group consisting of glycine, β -alanine, γ -aminobutyric acid and 5-aminovaleric acid; and
 - 15 at least one terminal alkylamino residue.
2. The composition of claim 1 wherein said subject is a human patient.
- 15 3. The composition of claim 1 wherein said oncogene is a cellular or endogenous oncogene.
4. The composition of claim 1 wherein said inhibition of transcription of said 20 oncogene is by modulating the binding to dsDNA of a protein factor selected from the group consisting of ESX, ETS, and TBP.
5. The composition of claim 1 wherein said condition is breast cancer.
- 25 6. The composition of claim 1 wherein said polyamide has a binding affinity at the target dsDNA sequence of at least 10^9 M⁻¹ and a selectivity of at least about two.
7. The composition of claim 1 wherein the complementary pairs of aromatic carboxamide residues are selected to correspond to the nucleotide sequence of the dsDNA 30 target are chosen from the group consisting of

Im/Py to correspond to the nucleotide pair G/C,
Py/Im to correspond to the nucleotide pair C/G,
Py/Py to correspond to the nucleotide pair A/T,
Py/Py to correspond to the nucleotide pair T/A,
5 Hp/Py to correspond to the nucleotide pair T/A, and
Py/Hp to correspond to the nucleotide pair A/T,

where Im is N-methyl imidazole, Py is N-methyl pyrrole, and Hp is 3-hydroxy N-methyl pyrrole.

10 8. The composition of claim 1 wherein at least one aliphatic amino acid residue is β -alanine.

15 9. The composition of claim 1 wherein said polyamide comprises two β -alanine residues that form a complementary pair of residues corresponding to the nucleotide pair A/T or T/A.

10. The composition of claim 1 wherein said terminal alkylamino residue is a N,N-dimethylaminopropyl residue.

20 11. The composition of claim 1 wherein at least one Py of a carboxamide pair is replaced by a β -alanine.

12. The composition of claim 1 wherein said polyamide is selected from the group consisting of Her2-1 and RPR70.

25 13. A method of treating a subject having a condition associated with expression or overexpression of an oncogene, comprising administering a composition according to claim 1.

30 14. The method of claim 13 wherein said subject is a human patient.

15. The method of claim 13 wherein said oncogene is a cellular or endogenous oncogene.

5 16. The method of claim 13 wherein said inhibition of transcription of said oncogene is by modulating the binding to dsDNA of a protein factor selected from the group consisting of ESX, ETS, and TBP.

10 17. The method of claim 13 wherein said condition is breast cancer.

18. The method of claim 13 wherein said polyamide has a binding affinity at the target dsDNA sequence of at least 10^9 M^{-1} and a selectivity of at least about two.

15 19. The method of claim 13 wherein the complementary pairs of aromatic carboxamide residues are selected to correspond to the nucleotide sequence of the dsDNA target are chosen from the group consisting of

20 Im/Py to correspond to the nucleotide pair G/C,

Py/Im to correspond to the nucleotide pair C/G,

Py/Py to correspond to the nucleotide pair A/T,

Py/Py to correspond to the nucleotide pair T/A,

Hp/Py to correspond to the nucleotide pair T/A, and

Py/Hp to correspond to the nucleotide pair A/T,

where Im is N-methyl imidazole, Py is N-methyl pyrrole and Hp is 3-hydroxy N-methyl pyrrole.

25 20. The method of claim 13 wherein at least one aliphatic amino acid residue is β -alanine.

21. The method of claim 13 wherein said polyamide comprises two β -alanine residues which form a complementary pair of residues corresponding to the nucleotide pair A/T or T/A.

5 22. The method of claim 13 wherein said terminal alkylamino residue is a N,N-dimethylaminopropyl residue.

23. The method of claim 13 wherein at least one Py of a carboxamide pair is replaced by a β -alanine.

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24. The method of claim 1 wherein said polyamide is selected from the group consisting of polyamides Her2-1, 70, and RPR70.

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